



# UNITED STATES PATENT AND TRADEMARK OFFICE

IFW

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/613,253

07/03/2003

Pieter G. Einthoven

02-0889

4882

64722

7590

03/28/2007

OSTRAGER CHONG FLAHERTY & BROITMAN, P.C.

250 PARK AVENUE

SUITE 825

NEW YORK, NY 10177-0899

EXAMINER

TO, TUAN C

ART UNIT

PAPER NUMBER

3663

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|-----------|---------------|
|--|-----------|---------------|

3 MONTHS

03/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/613,253 | <b>Applicant(s)</b><br>EINTHOVEN ET AL. |  |
|                              | <b>Examiner</b><br>Tuan C. To        | <b>Art Unit</b><br>3663                 |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19-21, 46-54 and 71-73 is/are pending in the application.
- 4a) Of the above claim(s) 7, 10, 13, 14, 17, 19, 20 and 71-73 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 46-54 is/are allowed.
- 6) ☒ Claim(s) 1-4, 8, 9, 11, 12, and 70 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 15, and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's election of claims 1-17, 19-21, and 46-54 in the reply filed on 1/16/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

#### ***Allowable Subject Matter***

The indicated allowability of claim 4 is withdrawn in view of the newly discovered reference(s) to Ho (US 5901927A). Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 3663

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 9, 11, 12, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rollet et al. (US 5863012A) and in view of Ho (US 5901927A).

With respect to claims 1, 9, and 11, The U.S. reference to Rollet et al. disclose a cyclic stick system that give a helicopter speed stability, wherein the forces is applied on the cyclic stick so that to accelerate (or decelerate) and maintain a new higher (or lower) speed (Rollet et al., column 2, lines 58-64). Furthermore the cyclic stick Mcy (see Rollet et al., figure 1) sends a signal a control signal to the flight control device CDV via a link e3. This solves the vertical state of the helicopter is controlled via the flight control device CDV. It concludes that Rollet et al. inherently discloses that constant vertical state is controlled.

Rollet et al. disclose a cyclic stick system for a helicopter, in which the cyclic stick is pushed or pulled at forces so that to accelerate or decelerate and then maintain a new higher or lower speed. Thus, Rollet et al. inherently disclose a maximum of the inceptor position limits in order to maintain the vertical state.

Rollet et al. teaches a cyclic stick system that control the speed stability of a helicopter in which maximum vertical inceptor position limits are based on the forces applied on the cyclic stick.

Rollet et al. fails to teach the following: "determining maximum acceleration limits for the longitudinal or lateral axis corresponding to the maximum allowable vertical inceptor position limits.

The new cited reference to Ho teaches a system/method for use with an aircraft to prevent an aircraft part from striking the ground during near ground maneuvers, in which the tail strike pitch attitude limit is set to the maximum allowable pitch attitude for the autopilot mode in according the limited pitch command signal from pitch command limit box (122) (Ho, column 5, lines 6-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the aircraft system/method as taught by Rollet et al. to include the teaching of maximum acceleration limits as taught in Ho for providing the advantage of maintaining the aircraft at an allowable elevation so that to maintain the aircraft in a desired flight path. This prevents great damage with other aircraft or an unwanted ground strikes.

With regard to claims 2 and 70, Rollet et al. teaches "acceleration limits are pitch and roll attitude limits" (Rollet et al., abstract).

With regard to claim 3, Rollet et al disclose that cyclic stick system for a helicopter, in which cyclic stick is pushed or pulled at forces so that to accelerate or decelerate and then maintain a new higher or lower speed. Thus, Rollet et al. inherently disclose the prediction of increasing or decreasing in pitch and roll attitude limits.

With regard to claim 4, Ho teaches maximum acceleration limited as represented as control inceptor position limits (Ho, column 5, lines 6-19).

With regard to claim 12, as taught in Rollet et al, the cyclic stick system is provided to maintain the stability for the helicopter in vertical in terms of forces on the cyclic stick so that accelerate and maintain a new higher (or lower) speed. Thus, Rollet et al. inherently discloses constant vertical altitude, constant vertical velocity, and constant flight path angle so that the stability of the helicopter in vertical is maintained.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollet et al. (US 5863012A), Ho (US 5901927A), and further in view of Tomio et al. (US 6334592B1).

With regard to claim 8, the Rollet et al and Ho, as in combination, suggests the limitations of claim 1 except for said limits that are provided to a software limiting system.

The reference to Tomio et al. has been cited as teaching a flight control apparatus for helicopter that includes the teachings of SAS (stability augmentation system) as to be identical to the software limiting system as claimed by the applicant.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Rollet et al, Ho, and Tomio et al. in order to improve the control characteristics of the helicopter and reduce the cross coupling between the longitudinal and lateral axes.

***Allowable Subject Matter***

The examiner has realized the prior art has failed to disclose at least the limitations as recited in claim 21 and 46. Thus, claims 21, and 46-54 are set in a condition of allowance.

Claims 5, 6, 15, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

Applicant's arguments with respect to claims 1-3, 8, 9, 11, and 12 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusions***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan C To whose telephone number is (571) 272-6985. The examiner can normally be reached on from 8:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878.

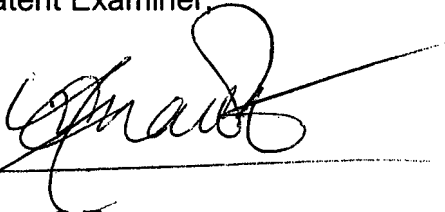
The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 3663

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner,

A handwritten signature in black ink, appearing to read 'Tuan C To', is written over a horizontal line.

Tuan C To

March 21, 2007



|                                   |                                       |  |  |             |
|-----------------------------------|---------------------------------------|--|--|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>10/613,253 |  | Applicant(s)/Patent Under<br>Reexamination<br>EINTHOVEN ET AL. |             |
|                                   | Examiner<br>Tuan C. To                |  | Art Unit<br>3663   | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name               | Classification |
|---|---|--|-----------------|--------------------|----------------|
| * | A | US-5,901,927                                     | 05-1999         | Ho, John Koon-Hung | 244/183        |
| * | B | US-5,310,136                                     | 05-1994         | Fowler et al.      | 244/17.13      |
| * | C | US-4,846,421                                     | 07-1989         | Trikha, Arun K.    | 244/122AE      |
| * | D | US-6,648,269                                     | 11-2003         | Gold et al.        | 244/17.13      |
| * | E | US-5,001,646                                     | 03-1991         | Caldwell et al.    | 701/7          |
|   | F | US-  |                 |                    |                |
|   | G | US-  |                 |                    |                |
|   | H | US-  |                 |                    |                |
|   | I | US-  |                 |                    |                |
|   | J | US-  |                 |                    |                |
|   | K | US-  |                 |                    |                |
|   | L | US-  |                 |                    |                |
|   | M | US-  |                 |                    |                |

**FOREIGN PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
|---|---|--|-----------------|---------|------|----------------|
|   | N |  |                 |         |      |                |
|   | O |  |                 |         |      |                |
|   | P |  |                 |         |      |                |
|   | Q |  |                 |         |      |                |
|   | R |  |                 |         |      |                |
|   | S |  |                 |         |      |                |
|   | T |  |                 |         |      |                |

**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
|   | U |   |
|   | V |   |
|   | W |   |
|   | X |   |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Organization TC3600 Bldg./Room KNOX  
U. S. DEPARTMENT OF COMMERCE  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450  
IF UNDELIVERABLE RETURN IN TEN DAYS  
OFFICIAL BUSINESS

AN EQUAL OPPORTUNITY EMPLOYER

